5/23/96
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From: STEPHEN MANGION
To: kathyg
Date: Thursday, May 23, 1996 4:22 pm
Subject: Preliminary Thoughts

Kathy /Luanne
Here are some early thoughts but they capture a lot of what are the big issues - for me at leats.
SMM

ACS

Bullet comments on the Upper and Lower Aquifer

May 3, 1996 letter from MW to EPA. I don not believe that a line by line rebuttal is appropriate or needed. Here are some general comments that get at the significant differences.

1. We will strengthen our arguments if we can refer to the specific language in EPA approval letters.

2. The RI did not determine the extent of contamination. However, enough information was available for EPA to select the remedy. During RD, other necessary data would be gathered. One of the lessons learned from the Superfund Program's history (as evidenced by reports of the National Research Council) is that site characterization is of prime importance in remedy design. The purpose of the field screening investigation was to begin the next data acquisition process and was meant to obtain an indication of contamination's extent. Monitoring wells to confirm extent of contamination were a part of the approval letter.

3. Site conceptual model. MW makes too much of very slight head differences - differences of less than 0.05 feet in some cases. MW fails to appreciate that in a DNAPL site, head differences alone cannot be used to infer contaminant fate and transport. At a DNAPL site, it is always likely that a subsurface source will be found relatively deep. As precipitation infiltrates from above, the presence of the subsurface source (DNAPL) can easily be masked by the relatively clean water above. Hence, EPA's longstanding position that subsurface characterization always extend as a minimum to the base of the upper sand unit and that wells be located with a screen at the base of that sand. EPA has also voiced concern about the very sharp declines in contaminants concentrations in some locations, particularly to the east of the site.

4. The additional upper wells that we are requiring in response to the last investigation are not only for remedial design (page 2, 3rd paragraph). They are to get at the extent of contamination.

5. Comment 3 of letter from MW, regarding sampling for PCBs. Semi-volatile transport need not be only as a dissolved phase as is the case with the VOCs. Facilitated transport is certainly an issue. More importantly, VOCs are likely to degrade before VOCs, thus there absence could be meaningless. Even more importantly, at a free phase site, the distribution\ of contaminants in the subsurface should be inferred solely from, the dissolved concentrations.

6. Comment 5 of MW letter:
Contamination in the ditch is a new finding (one that was made under the direction of EPA). No additional work is proposed in the Tech Memorandum. Indeed the Tech Memorandum merely noted that contamination was found. A plan to routinely sample this newly found area would seem a reasonable expectation. A plan to verify MW's hypothesized ground water-surface interaction would sem appropriate as well. EPA's comments were meant to assure that actual site data were gathered.

7. Comment 6 - abandonment of wells.
The MW comment reflects a extremely faulty understanding of remedial activities, including design. These deep wells may have acted a s conduits for contamination for a considerable period of time. Water supply wells may be overpacked with gravel around their casing, thereby providing a highly conductive pathway for contaminant transport. If this is true of the ACS wells, simply grouting the wells will not be useful Also note that 2 of the wells were apparently constructed by jetting and extend only to within the lower sandy portion of the aquifer..
Not all of the wells have even been sampled. In one a sheen has been seen; in another a very high HNu reading was recorded when the well was opened. MW does not propose any activity specifically to address these observations.
EPA has always stated that a proposal was needed to investigate the condition of the deep wells.. None has been forthcoming. Potential activities include: overdrilling of the well with an obstruction; sampling of the 2 wells without not yet sampled;

8. ,Comment 19, page 7/11/
MW does not understand facilitated transport of PCBS. I suggest they read the literature.
Regarding the piezometers: MW shows a very concentration gradient in many places, including the wetlands. Such a gradient is explained as being an accurate reflection of contaminant distribution's extent and being caused by vertical gradients within the wetlands. The piezometers are merely meant to verify the hypothesis. This is an example of gathering needed data in order to make environmentally sound decisions.

Some thought on the lower aquifer:
1. Need to have a proposal on what wells will be installed once

the upper system is in place. This should be made now based on the results of the studies done to date. The point is that this is the time to reach agreement on what wilol be done. Deferring that comitment willl only mean klost time and possible delay in implementing the lower aquifer remedy .
2. Since only low levels of contaminants seem to be present, I agree that we can defer further installation pending the upper treatment system. However, see above.
investiative wells prior to abandonment
3. Continuous recorders in wells in the lower portion of the lower sand will need to be implaced. The deep clay may expalin the lack of much response between the bedrock pumping and recoreders in the upper part of the lower sand. Certainly the discovery the deep clay overlying a shale, not the supposed limestone bedrock was surprisinfg and point to how site chatracterizatiuon is still needed.
4. Too much reliance is made of ground water samples taken from the newly instyalled and developed wells. in general, mnore time is needed between installaytion and sampling so that representative consdirtion will be reattained.
Also note that EPA had always advoated evaluating head data prior to sampling.

Some thoughts on containment:
1. We do not have the data needed to select or design a containmnet system. We would need a nother firld investigation to obtain data on the extent and nature of free phase contamination.
2. The currently proposed containmnet system is NOT applicable to a containment remedy since it was meant to be only a component of a treatment remedy and not a stand alone containment.
3. Compatability of free phase will be an issue unless sheet piles are used for containmnet - a very costly - circa 20 per foot squared I think.
4. Monitoring will be tricky. Certainly the underlying clay will need better configuation. And the issue of deep conyaination remains, particularly in the source area.
5. Will still need hydraulic controls ands ground water treatment.
6. Free phase should be removed to the extent practicable -

CC: R5WST.R5WASTE.VANDERPOOL-LUANNE